LITVIN, F.L.; PRINTSENTAL', S.G.; SHIGORIN, G.F.; KOLCHIN, N.I., professor, doktor tekhnicheskikh nauk, redaktor. [redacted]

[Production of multiple-thread worm gears with new geometry] Proizvodstvo mnogozakhodnykh cherviachnykh peredach s novoi geometriei. Pod obshchei red. N.I.Kolchina. Leningrad, Gos. nauchno-tekhn. izd-vo mashinostroit.i sudostroit. lit-ry [Leningradskoe otd-nie] 1953. 50 p. (Novatory proizvodstva) (MLRA 7:3)

(Gearing, Worm) (Spiral milling)

KOLCHIN, N.I.; LITVIN, F.L. [authors]; GAVRILENKO, V.A.; DAVYDOV, Ya.S. [reviewers].

"Calculations for the production and control of gearing parts." N.I.Kolchin, F.L.Litvin. Reviewed by V.A.Gavrilenko, IA.S.Davydov. Sov.kniga no.8:45-49 Ag '53. (MLRA 6:8)
(Gearing--Tables, calculations, etc.) (Kolchin, N.I.) (Litvin, F.L.)

KOLCHIN, N.I

USSR.

Kolčin, N. I. **Curvature of conjugate surfaces in spatial gearings.** Akad. Nauk SSSR. Trudy Sem. Teorii Mašin i Mehanizmov 13, no. 49, 5-15 (1953). (Russian)

The differential geometry of a pair of mating surfaces is illustrated by the example of a worm (whose thread section is the same as an involute gear tooth) driving a worm-wheel. The coefficients of the differential quadratic forms of the first and second orders are developed from the equations of the mating surfaces. The curvature of a normal section of a surface is then expressed in terms of these coefficients. In particular, for the contact point on the normal from the center of the wheel to the axis of the worm, the radius of curvature K of the wheel tooth, on the normal section parallel to the wheel axis, is $R \sin \delta$, where R is the pitch radius and δ is the pressure angle.

M. Goldberg.

KOLCHIN, N.I., redaktor; POLYAKOV, V.S.; KUDRYAVTSEV, V.N.; ZUBANOV, M.P.; ANOSOV, A.S.; BARBASH, I.D.; MYAGKOV, V.D.; FADEYEV, N.K., kandidat tekhnicheskikh nauk, dotsent, redaktor; GOLOVANOV, N.F., redaktor, kandidat tekhnicheskikh nauk.

[Machine parts] Detali mashin. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit.i sudostroit. lit-ry, 1954. 720 p. (MLRA 7:3)
(Machinery)

KOLCHIN, N.I., prof.

Elements of first and second order ovolute and Archimedean Screw surfaces. Trudy LTIKHP 6:3-17 '54. (MIRA 11:5)
(Screws, Theory of)

KOLCHIN, N.I.

Prof. A.K.Zaitsev's life and work. Tren.i izn. mash. no.9:5-17
'54. (MLRA 7:9)
(Zaitsev, Aleksandr Konstantinovich, 1873-1951)

KOKICHEV, Valentin Nikolayevich; GINZBURG, Ye.G., inshener, retsenzent;
KOLCHIN, N.I., professor, redaktor; TURETSKIY, I.Yu., kandidat
tekhnicheskikh nauk, redaktor; SHAVLYUGA, N.I., dotsent, redaktor;
VASIL'YEVA, V.P., redaktor izdatel'stva; POL'SKAYA, R.G., tekhnicheskiy redaktor

[Methods of finishing gear wheels] Metody otdelki zubchatykh koles.
Pod red. N.I.Kolchina. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1956. 49 p. (Bibliotechka zuboreza-novatora, no.8)
(Gear cutting) (MIRA 10:3)

MITSENGENDLER, Mikhail Litmanovich; **GINZBURG**, Ye.G., inzhener, retsenzent; **KOLCHIN**, N.I., professor, redaktor; **TURETSKIY**, I.Yu., kandidat tekhnicheskikh nauk, redaktor; **SHAVLYUGA**, N.I., dotsent, redaktor; **VASIL'YEVA**, V.P., redaktor izdatel'stva; **POL'SKAYA**, R.G., tekhnicheskiy redaktor

[Basic information on gear transmission] Osnovnye svedeniia o zubchatykh peredachakh. Pod red. N.I.Kolchina. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1956. 63 p. (Bibliotechka zuboreza-novatora, no.1) (MLRA 10:3)
(Gearing)

KOLCHIN, N.I.

Using the method of dynamic work for investigating the movement of machines. Trudy Inst.mash. Sem.po teor.mash. 16 no.61:73-83 '56.
(Mechanical movements) (MLRA 10:1)

Kolchin, N.I.

PHASE I BOOK EXPLOITATION 449

Turetskiy, Iosif Yudelevich; Lyubimkov, Leonid Nikolayevich; Chernov, Boris Vasil'yevich

Vosstanovleniye tekhnologicheskoy tochnosti zubofrezernykh stankov (Restoring the Precision of Gear-cutting Machinery) Moscow, Mashgiz, 1957. 115 p. (Bibliotechka zuboreza-novatora, vyp. 7) 10,000 copies printed.

Ed. (title page): Kolchin, N.I., Doctor of Technical Sciences, Professor; Reviewer: Printsental', S.G., Engineer; Ed. (inside book): Shavlyuga, N.I. Docent, Candidate of Technical Sciences; Ed. of Publishing House: Vasil'yeva, V.P.; Tech. Ed.: Pol'skaya, R.; Editorial Board of Series: Kolchin, N.I., Professor, (Chairman); Turetskiy, I. Yu., Candidate of Technical Sciences, and Shavlyuga, N.I., Docent, Candidate of Technical Sciences; Chief Ed. of the Leningrad Branch of Mashgiz: Bol'shakov, S.A., Engineer.

PURPOSE: This pamphlet is one of a series on gear cutting and is intended for skilled machine operators, foremen, and technicians in gear cutting plants.

~~Card 1/6~~

KOLCHIN, N.I.

KOGAN, Grigoriy Il'ich; MOROZOV, V.D., kand.tekhn.nauk dots., retsenzent;
KOLCHIN, N.I., prof. doktor tekhn.nauk, red.; TURETSKIY, I.Yu.,
red.; VASIL'YEV, V.P., red.izd-va; POL'SKAYA, R.G., tekhn.red.

[Design and examples of repairing gear-grinding machines] Raschet
i primery naladok zuboshlifoval'nykh stankov. Pod obshchei red.
N.I.Kolchina. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit.
lit-ry, 1957. 134 p. (Bibliotechka zuboreza-novatora, no.5)
(Gear-cutting machines) (MIRA 11: 5)

KOLCHIN, N.I.

TURETSKIY, Iosif Yudelevich; kandidat tekhnicheskikh nauk; LYUBIMKOV, Leonid Nikolayevich; CHERNOV, Boris Vasil'yevich; KOLCHIN, N.I., professor, doktor tekhnicheskikh nauk, redaktor; SHAVLYUGA, N.I., dotsent, kandidat tekhnicheskikh nauk, redaktor vypuska; GOFMAN, Ye.K., redaktor izdatel'stva; ANDOZHSKIY, V.D., kandidat tekhnicheskikh nauk, dotsent, retsenzent; POL'SKAYA, R.G., tekhnicheskiy redaktor.

[Making of very precise gearing] Izgotovlenie osobo tochnykh zubchatykh peredach. Pod obshchei red.N.I.Kolchina. Moskva, Gos.nauchno-tekhn. izd-vo mashinostroit.lit-ry, 1957. 179 p. (Bibliotechka zuboreza-novatora, no.6) (MLRA 10:5)

(Gearing)

Kolchin. N.I

KOLCHIN, Nikolay Ioasafovich, doktor tekhn.nauk, prof.; MOVNIN, M.S., prof., doktor tekhn.nauk, retsenzent; GARBARUK, V.N., kand.tekhn.nauk,red.; VASIL'YEVA, V.P., red.izd-va; POL'SKAYA, R.G., tekhn.red.

[The mechanics of machinery] Mekhanika mashin. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit. lit-ry. Pt.5. [Supplementary problems in the mechanics of machinery involving computations and designs for mechanisms] Dopolnitel'nye voprosy mekhaniki mashin po raschetu i proektirovaniiu mekhanizmov. 1957. 319 p. (MIRA 11:2)
(Machinery--Design)

KOLCHIN, N.I.

Analytical bases of the differential method used in investigating gears. Trudy Inst. mash. Sem. po teor. mash. 16 no.64:26-53 '57.
(Gearing) (Mechanics, Analytic) (MIRA 11:4)

MARKOV, Arkadiy L'vovich; KONOVALOV, Nikolay Petrovich; KOLCHIN, N.I., prof., red.; TURETSKIY, I.Yu., kand. tekhn. nauk, red.; SHAVLYUGA, N.I., dots., kand. tekhn. nauk, red.; VOLOSEVICH, F.P., inzh., retsenzent; VASIL'YEVA, V.P., red. izd-va; POL'SKAYA, P.G., tekhn. red.

[Checking gear wheels] Kontrol' zubchatykh koles. Pod red. N.I. Kolchina. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1958. 90 p. (Bibliotechka zuboreza-novatora, no.9). (MIRA 11:8)
(Gear cutting)

SHAVLYUGA, Nikolay Ignat'yevich, dotsent, kand.tekhn.nauk; KOLCHIN, N.I., prof., doktor tekhn.nauk, red.; KUCHER, I.M., dotsent, kand. tekhn.nauk, red.; SIMONOVSKIY, N.Z., red.izd-va; POL'SKAYA, R.G., tekhn.red.

[Automatic control of gear-cutting machines] Avtomatizatsiia v zuboreznom dele. Pod obshchei red. N.I. Kolchina. Moskva, Gos. nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1958. 101 p. (Bibliotechka zuboreza-novatora, no.10). (MIRA 12:1)
(Gear-cutting machines) (Automatic control)

VYGODER, Mikhail Izrailevich; MITSENGENDLER, Mikhail Litmanovich; KOLCHIN, N.I., prof., doktor tekhn.nauk, red.; TURETSKIY, I.Yu., kand. tekhn.nauk, red.; SHAVLYUGA, N.I., dotsent, kand.tekhn.nauk, red.; KUCHER, I.M., kand.tekhn.nauk, retsenzent; VASIL'YEVA, V.P., red. izd-va; POL'SKAYA, R.G., tekhn.red.

[Calculations and examples of adjustments of gear planing and shaping machines] Raschet i primery naladok zubodolbezhnykh i zubostrogal'nykh stankov. Pod red. N.I. Kolchina. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1958. 117 p. (Bibliotechka zuboreza-novatora, no.4) (MIRA 12:2)
(Gear-cutting machines)

KOLCHIN, N.I

GINZBURG, Yevgeniy Grigor'yevich; SHAMANIN, Aleksandr Vasil'yevich; KOLCHIN, N.I., prof. doktor tekhn.nauk, red.; TURETSKIY, I.Yu., red.;, LEYTUS, L.S., inzh., retsenzent; VASIL'YEVA, V.P., red. izd-va; POL'SKAYA, R.G., tekhn.red.

[Standardization in the manufacture of gear wheels] Tipovye tekhnologicheskie protsessy izgotovleniia zubchatykh koles. Pod obshchei red. N.I.Kolchina. Moskva, Gos. nauchno-tekhn. izd-vo mashinostroit. lit-ry, 1958. 126 p. (Bibliotechka zubareza-novatora, no.2) (MIRA 11:5)

(Gear cutting)

KOLCHIN, N. I.

SHAVLYUGA, Nikolay Igant'yevich, kand.tekhn.nauk dots.; VYGODER, Mikhail
Israilevich, inzh.; KOLCHIN, N.I., prof. doktor tekhn.nauk, red.;
TURETSKIY, I.Yu., kand.tekhn.nauk, red.; KUCHER, I.M., kand.
tekhn.nauk, dots., red.; VASIL'YEVA, V.P., redaktor izd-va;
POL'SKAYA, R.G., tekhn.red.

[Design and examples of repairing gear-cutting and slot cutting
machines] Raschet i primery naladok zubofrezernykh i shlitsefrezernykh
stankov. Pod obshchei red. N.I.Kolchina. Moskva, Gos.
nauchno-tekhn.izd-vo mashinostroit. lit-ry, 1958. 169 p.
(Bibliotechka zuboreza-novatora, no.3) (MIRA 11:5)
(Gear-cutting machines)

KOLCHIN, N. I.

N. I. Kolchin, "An Attempt to Establish a Broader Structural Classification of Mechanisms Presented in Tabular Form."

paper presented at the 2nd All-Union Conf. on Fundamental Problems in the Theory of Machines and Mechanisms, Moscow, USSR, 24-28 March 1958.

KOLCHIN, N.I.

ANDOZHSKIY, Vsevolod Dmitriyevich, dotsent, kand.tekhn.nauk; BELYANIN, Aleksandr Ivanovich, inzh.; VEYTS, Vladimir L'vovich, inzh.; GINZBURG, Yevgeniy Grigor'yevich, inzh.; YEFIMOVICH, Aleksey Illarionovich, inzh.; KRIVENKO, Igor' Semenovich, inzh.; SHANNIKOV, Vladimir Mikhaylovich, doktor tekhn.nauk; FRENKEL', Izrail' Nakhmanovich, kand.tekhn.nauk; GRUBIN, A.N., prof., doktor tekhn.nauk, retsenzent; KOLCHIN, N.I., prof., doktor tekhn.nauk, red.; GOLOVANOV, N.F., kand.tekhn.nauk, red.; SIMONOVSKIY, N.Z., red.izd-va; POL'SKAYA, R.G., tekhn.red.

[Gear and worm drives; some problems in theory, design, and manufacture] Zubchatye i cherviachnye peredachi; nekotorye voprosy teorii, rascheta i proizvodstva. Pod red. N.I.Kolchina. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 219 p. (MIRA 12:6)

(Gearing)

KOLCHIN, Nikolay Iosafovich, prof.; GNUCHEV, Mikhail Vladimirovich, dotsent; NARYSHKIN, I.I., otv.red.

[Design of mechanisms of industrial machinery] Raschet i proektirovanie mekhanizmov proizvodstvennykh mashin; konspekt lektsii professora N.I.Kolchina obrabotan i dopolnen dotsentom M.V.Gnuchevym. Leningrad, 1960. 73 p. (MIRA 14:6)

1. Leningrad. Politekhnicheskiy institut.
(Machinery—Design and construction)

KOLCHIN, N.I.

Some problems in the dynamics of kinematic chains of machines with self-braking mechanisms. Trudy LPI no.211:5-13 '60.(MIRA 13:11)
(Machinery, Kinematics of)

KOLCHIN, Nikolay Ioasafovich, zasl. deyatel' nauki i tekhniki RSFSR, doktor tekhnicheskikh nauk, prof.; MARKEVICH, A.A., kand. tekhn. nauk, retsenzent; LEBEDEV, P.A., kand. tekhn. nauk, retsenzent; GARBARUK, V.N., kand. tekhn. nauk, red.; VASIL'YEVA, V.P., red. izd-va; ONISHCHENKO, R.N., red. izd-va; POL'SKAYA, R.G., tekhn. red.

[Mechanical engineering] Mekhanika mashin. Moskva, Mashgiz. Vol.1. [Structure and kinematics of mechanisms. Geometrical and kinematic analysis and synthesis of mechanisms] Struktura i kinematika mekhanizmov, geometricheskii i kinematicheskii analiz i sintez mekhanizmov. Izd.2., perer. 1962. 549 p. (MIRA 15:3)

(Mechanical engineering) (Mechanical movements)
(Gearing)

SHAVLYUGA, Nikolay Ignat'yevich; KOLCHIN, N.I., zasl. deyatel' nauki i tekhniki RSFSR, doktor tekhn. nauk, prof., red.; KUCHER, I.M., kand. tekhn. nauk, red.; SIMONOVSKIY, N.Z., red. izd-va; BARDINA, A.A., tekhn. red.

[Mechanization and automation of gear-cutting operations]Mekhanizatsiia i avtomatizatsiia v zuboreznom dele. Pod obshchei red. N.I.Kolchina. Izd.2. Moskva, Mashgiz, 1962. 91 p. (Bibliotechka zuboreza, no.8) (MIRA 15:9)
(Gear cutting—Technological innovations)
(Automation)

GINZBURG, Yevgeniy Grigor'yevich, kand. tekhn. nauk; SHAMANIN, Aleksandr Vasil'yevich, inzh.; KOLCHIN, N.I., doktor tekhn. nauk, prof., zasl. deyatel' nauki i tekhniki RSFSR, red.; FIRUN, N.B., kand. tekhn. nauk, red.; SIMONOVSKIY, N.Z., red.; BARDINA, A.A., tekhn. red.

[Standard technological processes in manufacturing gear transmissions]Tipovye tekhnologicheskie protsessy izgotovleniia zubchatykh peredach. Pod obshchei red. N.I.Kolchina. Izd.2., perer. i dop. Moskva, Mashgiz, 1962. 114 p. (Bibliotechka zuobreza, no.2) (MIRA 15:9)

(Gear cutting)

PISMANIK, Kalman Matveyevich, kand. tekhn. nauk; KEDRINSKIY, Vasiliy Nikolayevich, kand. tekhn. nauk, Laureat Leninskoy premii; FIRUN, N.B., kand. tekhn. nauk, retsenzent; KOLCHIN, N.I., zasl. deyatel' nauki i tekhniki RSFSR, doktor tekhn. nauk, prof., red.; GINZBURG, Ye.G., kand. tekhn. nauk, red.; SIMONOVSKIY, N.Z., red. izd-va; BARDINA, A.A., tekhn. red.

[Calculation and examples of adjustments of machine tools for cutting bevel gears with circular teeth]Raschet i primery naladok stankov dlia narezaniia konicheskikh koles s krugovymi zub'iami. Pod obshchei red. N.I.Kolchina. Moskva, Mashgiz, 1962. 109 p. (Bibliotechka zuboreza, no.5) (MIRA 15:9)
(Gear-cutting machines)

KOLCHIN, Nikolay Ioasafovich, prof., doktor tekhn. nauk, zasl. deyatel' nauki i tekhniki RSFSR; MOVNIN, Mikhail Savel'yevich, prof., RUDENKO, N.F., prof., doktor tekhn. nauk, retsenzent; RESHETOV, L.N., prof., doktor tekhn. nauk, retsenzent; SHAURAK, Ye.N., red.; SHISHKOVA, L.M., tekhn.red.

[Theory of mechanisms and machinery; construction and kinematics of mechanisms, dynamics of machinery and friction] Teoriia mekhanizmov i mashin; struktura i kinematika mekhanizmov, dinamika mashin i trenie. Pod obshchei red. N.I.Kolchina. Leningrad, Sudpromgiz, 1962. 615 p. (MIRA 15:9)
(Machinery, Kinematics of) (Cams) (Gears) (Friction)

5

KOLCHIN, Nikolay Ioasafovich, prof., doktor tekhn. nauk, zasl. deyatel' nauki i tekhniki RSFSR; MOVNIN, Mikhail Savel'yevich, prof., RUDENKO, N.F., prof., doktor tekhn. nauk, retsenzent; RESHETOV, L.N., prof., doktor tekhn. nauk, retsenzent; SHAURAK, Ye.N., red.; SHISHKOVA, L.M., tekhn.red.

[Theory of mechanisms and machinery; construction and kinematics of mechanisms, dynamics of machinery and friction]Teoriia mekhanizmov i mashin; struktura i kirematika mekhanizmov, dinamika mashin i trenie. Pod obshchei red. N.I.Kolchina. Leningrad, Sudpromgiz, 1962. 615 p. (MIRA 15:9)

(Machinery, Kinematics of) (Cams) (Gears) (Friction)

TURETSKIY, I.Yu.; LYUBIMKOV, L.N.; CHERNOV, B.V.; YELESINA, O.G., inzh., retsenzent; KOLCHINA, N.I., zasl. deyatel' nauki i tekhniki RSFSR, doktor tekhn. nauk, prof., red.; MAYDEL'MAN, E.D., inzh., red.; ONISHCHENKO, R.N., red. izd-va; BARDINA, A.A., tekhn. red.

[Manufacture of heavily-loaded high-speed gears]Izgotovlenie tiazhelonagruzhennykh skorostnykh zubchatykh peredach. 2., perer. izd. Pod obshchei red. N.I.Kolchina. Moskva, Mashgiz, 1962. 134 p. (Bibliotechka zuboreza, no.9) (MIRA 15:11)
(Gear cutting)

KOLCHIN, N.I., zasl. deyatel' nauki i tekhniki RSFSR, doktor tekhn. nauk, prof.; VEYTS, V.L., kand. tekhn. nauk; MITSENGENDLER, M.L., inzh.; SMIRNOV, G.A., kand. tekhn. nauk, retsenzent; GINZBURG, Ye.G., kand. tekhn.nauk, red.; ONISHCHENKO, R.N., red. izd-va; BARDINA, A.A., tekhn. red.

[Fundamental information on gear transmissions and meshings] Osnovnye svedeniia o zubchatykh peredachakh i zatsepleniiakh. Pod obshchei red. N.I.Kolchina. Moskva, Mashgiz, 1962. 144 p. (Bibliotechka zuboreza, no.1) (MIRA 16:1)
(Gearing)

TAYTS, B.A.; MARKOV, N.N.; KOLCHIN, N.I., zasl. deyatel' nauki i tekhniki RSFSR, doktor tekhn. nauk, prof., red.; KUTAY, A.K., kand. tekhn. nauk, retsenzent; FIRUN, N.B., kand. tekhn. nauk, red.; ONISHCHENKO, R.N., red. izd-va; BARDINA, A.A., tekhn. red.

[Precision standards and control of gear wheels]Normy tochnosti i kontrol' zubchatykh koles. Pod obshchei red. N.I.Kolchina. Moskva, Mashgiz, 1962. 103 p. (Bibliotechka zuboreza, no.6)
(MIRA 16:2)

(Gearing—Standards)

KOGAN, G.I.; KOLCHIN, N.I., zasl. deyatel' nauki i tekhniki RSFSR, doktor
tekhn. nauk, prof., red.; TURETSKII, I.Iu., kand. tekhn.nauk,
red.; ONISHCHENKO, R.N., red.izd-va; BARDINA, A.A., tekhn. red.

[Finishing gear wheels]Otdelka zubchatykh koles. 2., perer. izd.
Pod obshchei red. N.I.Kolchina. Moskva, Mashgiz, 1962. 118 p.
(Bibliotechka zuboreza, no.7) (MIRA 16:2)
(Grinding and polishing) (Gear cutting)

TURETSKIY, I.Yu.; LYUBIMKOV, L.N.; CHERNOV, B.V.; KOLCHIN, N.I., zasl.
deyatel' nauki i tekhniki RSFSR, doktor tekhn. nauk, prof.,
red.; MAYDEL'MAN, E.D., inzh., retsenzent; VEYTS, V.L., kand.
tekhn. nauk, red.; ONISHCHENKO, R.N., red.izd-va; BARDINA,
A.A., tekhn. red.

[Recovering the machining precision of gear-cutting machines]
Vosstanovlenie tekhnologicheskoi tochnosti zuboreznykh stankov.
Pod obshchei red. N.I.Kolchina. 2. perer. izd. Moskva, Mashgiz,
1962. 91 p. (Bibliotechka zuboreza, no.10) (MIRA 16:3)
(Gear-cutting machines--Maintenance and repair)

SHAVLYUGA, N.I.; KOLCHIN, N.I., zasl. deyatel' nauki i tekhniki RSFS[redacted]uk, prof., red.; TURETSKIY, I.Yu., kand. tekhn.nauk, retsenzent; YELESINA, O.G., inzh., red.; GOFMAN, Ye.K., red.izd-va; BARDINA, A.A., tekhn. red.

[Calculation and examples of the adjustments of gear-milling and gear-shaping machines] Raschet i primery naladok zubofrezernykh i zubodolbezhnykh stankov. Pod obshchei red. N.I. Kolchina. Moskva, Mashgiz, 1963. 136 p. (Bibliotechka zuboreza, no.3) (MIRA 16:7)

(Gear-cutting machines) (Gear-shaping machines)

KOLCHIN, N.I., zasl. deyatel' nauki i tekhniki RSFSR, doktor tekhn. nauk, prof.; GARBARUK, V.N., kand. tekhn. nauk, red.; MIKHEYEVA, R.N., red.izd-va; SHCHETININA, L.V., tekhn.red.

[Mechanical engineering] Mekhanika mashin. Moskva, Mashgiz. Vol.2. [Kinetostatics and dynamics of machines . Friction in machines] Kinetostatika i dinamika mashin. Trenie v mashinakh. Izd.2., perer. 1963. 534 p. (MIRA 16:9)

(Machinery, Kinematics of) (Friction)

KOLCHIN, N.I.

Efficiency of accelerating transmissions as compared with the efficiency of reducing transmissions. Trudy LPI no.236:5-14 '64. (MIRA 18:3)

KOLCHIN, N.I.

Dynamics of self-braking systems. Trudy LPI no.254:5-13 '65.
(MIRA 19:1)

KOLCHIN, N.L.; KUGUSHEV, I.D.

Selecting the diameter of the tube rolls. Bumagodel.mash. no.7: 97-102 '59. (MIRA 13:5)

(Papermaking machinery)

KOLCHIN, N. N., Cand Tech Sci -- (diss) "Search and investigation ~~for~~ of working organs for the recovery of potato tubers from heavy soils when they are low in moisture." Moscow, 1957, 21 pp (Moscow Institute for the Mechanization and electrification of Agriculture im V. M Molotov) 150 copies (KL, 36-57, 105

KOLCHIN, N.N.

[redacted]

Pneumomechanical method for separating potato tubers from clods.
Sel'khozmachina no.3:19-21 Mr '57. (MLRA 10:5)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo machinostroyeniya.

(Potatoes--Harvesting)

KOLCHIN, N.N., inzhener

Separating potato tubers from hard clods. Sel'khozmashina no.5:8-12
My '57. (MLRA 10:5)

1.Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo mashinostroyeniya.
(Potatoes--Harvesting) (Separators (Machines))

KOLCHIN, N. N., (Prof.)

Prof. N. N. Kolchin, "Operating Characteristics of Link Mechanisms Under the Consideration of the Influence of Inertia Forces and the Methods of Construction.

paper presented at the 2nd All-Union Conf. On Fundamental Problems in the Theory of Machines and Mechanisms, Moscow, USSR, 24-28 March 1958.

KOLCHIN, N.N.

Machinery for harvesting potatoes. Trakt.i sel'khozmash. 31 no.2:48,3 of cover F '61. (MIRA 14:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo mashinostroyeniya.

(Potato digger (Machine))

KOLCHIN, N.N., kand.tekhn.nauk

Machinery for postharvest processing of potatoes. Trakt.i sel'khozmash. 32 no.9:27-28 S '62. (MIRA 15:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo mashinostroyeniya.
(Agricultural machinery) (Potatoes)

KOLCHIN, N.N., kand. tekhn. nauk

Design characteristics of potato sorting machines made in the German Federal Republic. Trakt. i sel'khozmash. no.5:46-48 My '64. (MIRA 17:6)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo mashinostroyeniya.

PETROV, G.D.; FIRSOV, N.V.; KOLCHIN, N.N.; KALAMIN, A.I.; KUCHERENKO, N.Ye.;
ANIKEYENKO, A.I.

Mechanization of potato storing and prospects for its development.
Trakt. i sel'khozmash. no.7:22-24 Jl '64. (MIRA 18:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut sel'skokhozyaystvennogo mashinostroyeniya, Moskva (for Petrov, Firsov, Kolchin, Kalamin). 2. Nauchno-issledovatel'skiy institut torgovli i obshchestvennogo pitaniya (for Kucherenko). 3. Gosudarstvennyy institut po proyektirovaniyu predpriyatiy torgovli i obshchestvennogo pitaniya (for Anikeyenko).

KOLCHIN, O.P. and MEYERSON, G.A.

"On the Physicochemical Principles of the Process of Reducing Chemically Stable Oxides with Calcium Hydride," Sbornik Nauchnykh Trudov, Moskovskiy Institut Tsvetnykh Metallov i Zoloto imeni M.I. Kalinina No 25, 1955

Kolchin, O.P.

AUTHORS: Kolchin, O.P., and Chuveleva, N.P. 136-12-13/18

TITLE: Investigation of the Sintering Process of Niobium Powder (Issledovaniye protsessa spekaniye poroshkoobraznogo niobiya)

PERIODICAL: Tsvetnyye Metally, 1957, No.12, pp. 65 - 70 (USSR).

ABSTRACT: Pointing out the potential importance of metallic niobium, the authors discuss the sintering of this material, describing their experiments. They used niobium powder reduced by sodium from potassium fluoroniobate, the dry powder being compressed at 1.5 tons/cm^2 in 10 x 10 x 70 mm blocks in a laboratory vacuum furnace while heated by the passage through them of an electrical current. Temperature was measured with an optical pyrometer. Charges in the resistivity, hardness, density, weight and quality (niobium-content of surface layer) were determined for blocks sintered at temperatures from 750 to 2 330 °C. These are shown graphically (Fig.1) and discussed, some similarity to those for tantalum being noted. The effects observed at various temperatures (including speed of refining, gas evolution, plasticity) are considered and used as a basis for recommended sintering conditions (Fig.2): with a vacuum of the order of 5×10^{-5} mmHg the temperature should be raised to 1 750 °C in 10 to 15 minutes and soaked for a short time;
Card1/2 rapid heating to 2 250 °C (soaking for 1 hour) and then to

Kolchin, O.P.

AUTHOR: MEYERSON, G.A., KOLCHIN, O.P. PA - 2307

TITLE: On the Mechanism of the Reduction of the Oxides of Zirconium and Titanium by Calcium-hydride. (O mekhanizme vostanovleniya okislov tsirkoniya i titana gidridom kal'tsiya, Russian).

PERIODICAL: Atomnaia Energiia, 1957, Vol 2, Nr 3, pp 253 - 259 (U.S.S.R.)
Received: 4 / 1957 Reviewed: 5 / 1957

ABSTRACT: On the basis of the example of these reduction processes the theoretical basis of the reduction of the chemically stable metal oxides by calcium-hydride is investigated. The present paper studies the physical-chemical conditions for the use of calcium-hydride as reduction means of zirconium- and titanium oxides. The question as to whether calcium hydride (as a means of reduction of higher energy) is more advantageous than calcium, mainly in connection with the separation of atomic hydrogen during the decomposition of calcium-hydride, is above all investigated. The thermo-dynamics of the reduction processes mentioned in the title and the experiments carried out when investigating the mechanism of the reactions are discussed. The following results are obtained from these investigations:

1) By means of the thermodynamic computation of these reduction processes and by means of special experiments the reducing activity of the calcium-hydride and of the calcium liberated during its thermal dissociation and of the atomic hydrogen was determined. The decrease of the free energy during the interaction of atomic

Card 1/3

On the Mechanism of the Reduction of the oxides of Zirconium and Titanium.

hydrogen with zirconium oxide and titanium oxide is smaller than during its reduction by means of calcium in an atmosphere of molecular hydrogen. This applies also to conditions at which the possibility of a metastable existence of atomic hydrogen is assumed under a partial pressure of one atmosphere. But under real conditions, the partial pressure of atomic hydrogen is very small, a fact which decreases its reducing power considerably. This is an indication of the inaccuracy of the now prevailing opinion that the high reaction power of the calcium-hydride is, above all, due to the effect of liberated atomic hydrogen.

2) Above 1000°, calcium, together with chemically stable oxygens, does not only react in a liquid but also in a vaporous state, a fact promoting the acceleration of the process and the completeness of the interaction of calcium with particles of the oxides to be reduced.

3) The hydrogen liberated during the dissociation of the hydrides of viscous metals above 1000° suited up to a certain degree is for the reduction of thin oxide films on the surface of the crystals of these metals (hydrides)

PA - 2307

On the Mechanism of the Reduction of the Oxides of Zirconium and Titanium by Calcium-Hydride.

ASSOCIATION: Not given
PRESENTED BY:
SUBMITTED: 25.5.1956
AVAILABLE: Library of Congress.

Card 3/3

AUTHORS: Kolchin, O.P., Sumarokova, N. V., Chuveleva, N. P., 89-12-5/29

TITLE: Production of Plastic Niobium (Polucheniye plastichnogo niobiya)

PERIODICAL: Atomnaya Energiya, 1957, Vol. 3, Nr 12, pp. 515-524 (USSR)

ABSTRACT: First the properties of niobium are written down. The process necessary for obtaining niobic powder with 98,9 - 99,2% content of niobium is described in detail. This powder is obtained by reduction of the K_2NbF_7 with sodium. If from thepowder obtained pressed bars are manufactured and sintered in the vacuum, plastic niobium is obtained. The investigation of thephase condition of this not entirely reduced mixture of niobic oxide and niobic carbide shows that the main reaction in the reduction in the vacuum can be understood as a summation reaction of successively occurring reactions in the following form:

$$Nb_2O_5 + 5\ NbC \xrightarrow{<1200^\circ C} 2\ NbO_2 + 5\text{"NbC"}\ (NbC_{0,8}) + CO$$

where "NbC" is the phase with variable composition:

$$2\ NbO_2 + 5\text{"NbC"}\ (NbC_{0,8}) \xrightarrow{\sim 1200^\circ C} 0,5\ NbO_2 + 1,5\ NbO + 2,5\ Nb_2C + 1,5\ CO$$

$$0,5\ NbO_2 + 1,5\ NbO + 2,5\ Nb_2C \xrightarrow{\sim 1400^\circ C} 2NbO + 2Nb_2C + Nb + 0,5\ CO$$

$$2\ NbO + 2\ Nb_2C + Nb \xrightarrow{\geq 1400^\circ C} 7\ Nb + 2\ CO$$

Special investigations gave evidence that in the choice of the reduction regimen the interaction between the vapours of the infer-

Card 1/2

Production of Plastic Niobium 89-12-5/29

ior niobic oxide and the niobic carbides are very important. As production of thecarbide reduction and sintering with refinery at the same time plastic niobium of the following composition is obtained: $\geq 99,98\ \%$ Nb+Ta (where Ta $< 0,1\%$)

$(2,5 - 7) \cdot 10^{-3}\ \%$ O

$(3 - 10) \cdot 10^{-3}\ \%$ C

$4 \cdot 10^{-5}\ \%$ Sn

$< 1 \cdot 10^{-3}\ \%$ Sc, S, P, Cu, Ar, Ca, Mn

$< 1 \cdot 10^{-4}\ \%$ Pb, Bi, Cd, H

$< 3 \cdot 10^{-3}\ \%$ Ti

$< 2 \cdot 10^{-3}\ \%$ Fe

$< 1 \cdot 10^{-6}\ \%$ Sb

There are 5 tables, 2 figures and 2o references, 1o of which are Slavic.

SUBMITTED: August 19, 1957

AVAILABLE: Library of Congress

Card 2/2

SAMSONOV, Grigoriy Valentinovich; **KONSTANTINOV**, Vladimir Ivanovich. Prinimali uchastiye: **ZIV**, Ye.F.; **KOSOLAPOVA**, T.Ya. **NIKOLAYEV**, N.S., doktor khim.nauk, retsenzent; **VAYSENBERG**, A.I., kand.tekhn. nauk, retsenzent, red.; [redacted], kand.tekhn.nauk, retsenzent, red.; **ARKHANGEL'SKAYA**, M.S., red.izd-va; **VAYNSHTEYN**, Ye.B., tekhn. red.

[Tantalum and niobium] Tantal i niobii. Moskva, Gos.nauchno-tekhn. izd-vo lit-ry po chernoi i tsvetnoi metallurgii, 1959. 264 p. (MIRA 12:11)

(Tantalum) (Niobium)

SOV/136-59-2-14/24

AUTHORS: Kolchin, O.P. and Chuveleva, N.P.

TITLE: Production of Alloys of Niobium with Tantalum by the Carbothermic (Carbide) Method (Polucheniye splavov niobiya s tantalom karbotermicheskim (karbidnym) sposobom)

PERIODICAL: Tsvetnyye Metallov, 1959, Nr 2, pp 60-64 (USSR)

ABSTRACT: The author points out that niobium-tantalum alloys are as suitable as the pure metals in many applications and are easier to produce. In the work described these alloys were produced by the reaction $Me_2O_5 + 5 MeC = 7Me + 5O$ (Me = Nb and Ta) which has been used previously by the authors (Ref 3) for these elements. The compositions of the oxides and carbides are shown in table 1 and the size grading of the carbides in table 2. The carbides mixture was mixed over a period of days with 5% excess of the theoretical quantities of the oxides mixture and the resulting mixture was compressed into 10 x 10 x 70 mm bars which were heated to 1800°C in a vacuum by radiation and then by the passage of an electric current. The temperature used for various

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SOV/136-59-2-14/24

Production of Alloys of Niobium with Tantalum by the Carbothermic

tantalum percentages is shown in Fig 1 and temperatures for various durations of heating for the 80- and 20-% Ta alloys in Fig 2. Considerable shrinkage occurred during the heating but the porosity was 20 to 30% and this could be reduced by further treatment (table 3). Fig 3 shows the theoretical density as a function of tantalum content and is based on X-ray determinations (carried out by A.S.Znamenskaya who also did the calculations). After forging the density of the specimens approached the theoretical. The bars could be cold-rolled without heat-treatment and maximal carbon, titanium, iron and silicon contents of strip were 0.008, 0.036, 0.002 and 0.003% respectively. The authors show that Fig 3 can be used with certain limitations for the rapid determination of compositions by measuring the density for alloys with 10 to 90 Ta. There are 3 figures, 4 tables and 3 references of which 2 are Soviet and 1 English.

Card 2/2

KOLCHIN, O.P., kand.tekhn.nauk, red.; L'VOVA, N.M., red.; DZHATIYEVA, F.Kh., tekhn.red.

[Niobium and tantalum; collected papers] Niobii i tantal; sbornik statei. Pod red. O.P.Konchina. Moskva, Izd-vo inostr. lit-ry, 1960. 485 p. (MIRA 14:4)
(Niobium) (Tantalum)

S/089/61/010/002/012/018
B102/B209

AUTHORS: Kolchin, O. P., Sumarokova, N. V.

TITLE: Melting point and other properties of lower niobium oxides

PERIODICAL: Atomnaya energiya, v. 10, no. 2, 1961, 168-170

TEXT: The present paper is a report on investigations made on NbO and NbO_2. NbO_2 was produced by reduction of the pentoxide in vacuo at 1300 and 1700°C, NbO by reduction of NbO_2. The impurities in the pentoxide (tantalum-silicon-, titanium-, and iron oxides) were removed for the major part during reduction in vacuo. The three obtained niobium dioxide samples still contained 0.02 - 0.04% by weight of C, 0.006% by weight of N and had the composition $NbO_{1.942}$, $NbO_{1.956}$ and $NbO_{1.986}$. Radiographic structural analysis showed that the product consisted of one phase only with the following lattice parameters: $a = 4.82 \pm 0.02$ kX, $c = 2.99 \pm 0.02$ kX. The three monoxide samples contained 0.04 - 0.06% by weight C and 0.03% by weight N and exhibited the composition $NbO_{0.95}$, $NbO_{1.01}$, and $NbO_{1.02}$. Melting point determination: Briquets

√

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Melting point and other ...

S/089/61/010/002/012/018
B102/B209

(1.5 - 2.0 t/cm^2, 10 x 10 mm cross section) were pressed from NbO and NbO_2 powder and electrically heated in containers made of niobium sheet by a graphite heater in vacuo. The melting point of NbO was found to be at 1935°C, that of NbO_2 at 2080°C, allowing for an error of ± 15°C. Micro- and radiographic structural analysis was employed on re-molten NbO for checking the single-phase consistency and to determine the parameter a (4.201 kX). The results concerning NbO_2 do not agree with those form Ref. 9 which is said to be due to the fact that in that case NbO_2 contained NbO impurities. Determination of volatility and composition of the gaseous phase: Investigations in vacuo (0.5 - 1.10^{-6}mm Hg) at various temperature showed that both oxides start evaporating at a considerable rate at 1700°C. At 1850°C, all of the monoxide and 45% by weight of the dioxide were evaporated after 4 hours, and after 8 hours also the dioxide was entirely evaporated. It was proved mass-spectroscopically that the gaseous phase above NbO_2 contains NbO_2 molecules only, i. e. that neither dissociation nor association take place. Investigation of the micro-hardness: Re-molten homogeneous niobium oxide samples had a micro-hardness of

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S/089/61/010/002/012/018
B102/B209

Melting point and other ...

1930 kg/mm^2, the eutectic in the average one of 794kg/mm^2 (load of 50 g), the dioxide 1720 kg/mm^2; the latter value is inaccurate. Character of electric conductivity: NbO turned out to have metallic conductivity, NbO_2 to be a semiconductor. Oxidation in air: Dioxides ($NbO_{2.00}$ and $NbO_{1.92}$) produced at 1300 and 1700°C, respectively, and a monoxide ($NbO_{0.914}$) produced at 1700°C were powdered (grain size 0.15mm) and heated in air at 100 - 300°C; oxygen content was determined. After 6 hours of heating at 100, 150, 200, 225, 250, and 275°C the oxygen content was unchanged in the monoxide and was a little raised in the dioxide at 275°C. However, the surface of the powder particles of both oxides became yellowish already at 150°C and bronze-colored at 200°C. Only after 6 hours at 300°C, both oxides were completely oxidized to the pentoxide. In conclusion, the authors thank L. V. Mel'nikova for having made the metallographic analysis. There are 2 figures and 11 references: 5 Soviet-bloc and 2 non-Soviet-bloc.

SUBMITTED: October 4, 1960

Card 3/3

S/180/61/000/006/002/020
E021/E135

AUTHORS: Sazhin, N.P., Kolchin, O.P., and Sumarokova, N.V. (Moscow)

TITLE: The processes of reduction of niobium oxides by carbon

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Otdeleniye tekhnicheskikh nauk. Metallurgiya i toplivo, no.6, 1961, 8-24

TEXT: The chemical and physical processes occurring during high temperature reduction of oxides of niobium by carbon were studied with the aim of explaining the mechanism of reduction. Niobium pentoxide powder (0.15 mm particles) containing 0.01% TiO_2, 0.06% Fe_2O_3 and 0.01% SiO_2 was used with lamp-black or niobium-carbide as reducing agents. The niobium carbide was prepared by heating a mixture of niobium carbide with lamp black at 1800 °C in a current of hydrogen; it contained 10.2% carbon. The phase composition of the products of incomplete reduction were studied, a thermodynamic analysis of the Nb-O-C system was made and the properties of the oxides of niobium were investigated. The rates

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of diffusion of oxygen and carbon in niobium and the rates of evaporation of the lower oxides of niobium were compared semi-quantitatively. From the results of the experiments and from a critical examination of other literature it is shown that the reduction is a multi-stage process, and a mechanism for reduction at temperatures used in practice is proposed. Reduction by niobium carbide at 1100-1300 °C of the pentoxide to the dioxide and partially to the oxide occurs in the main by the generally accepted two-stage scheme with the formation of carbon monoxide. Reduction may also occur at the beginning of the process by interaction in the solid phase between niobium pentoxide and carbon formed by dissociation of the carbide. The second stage of the process is the reduction of the lower oxides of niobium at temperatures above 1500 °C. This takes place in the gaseous phase and depends on the evaporation of the lower oxides which is the reaction limiting the rate of the process. In the last stage of the process, oxygen and carbon diffuse to the surface of the pores in the metal and are evolved as carbon monoxide. The reaction limiting the purification of the metal from dissolved

oxygen and carbon is the desorption of the carbon monoxide. The reduction of the pentoxide to the dioxide and the dioxide to the oxide can be carried out in a relatively low vacuum or in a current of hydrogen or inert gas. The reduction of the oxide and the removal of the carbon monoxide at temperatures used in practice require a high vacuum. The rate of reduction can be increased by increasing the temperature and rate of carbon monoxide removal. The maximum temperature possible for each stage is determined by the melting point of the phase most easily melted. The proposed mechanism for the reduction process of niobium can be extended without any radical changes to the reduction process of tantalum and vanadium from their oxides and from mixtures of their oxides and carbides.
There are 6 figures, 4 tables and 33 references: 19 Soviet-bloc, 6 Russian translations from non-Soviet publications, and 8 non-Soviet-bloc. The four English language references read as follows:

✓

The processes of reduction of ... S/180/61/000/006/002/020
E021/E135

Ref.15: G.L. Miller. Tantalum and Niobium, London, 1959, pp 181-187, 283-291.

Ref.17: High Temperature Technology. N.Y.-London, 1956. ed. J.E. Campbell.

Ref.24: F. Holtsberg, A. Reisman, M. Bewry, M. Berkonbilt. The polymorphism of Nb_2O_5. J. Amer. Chem. Soc., 1957, 79, 2039.

Ref.26: R. Orr. High temperature heat contents of tantalum and niobium oxides. J. Amer. Chem. Soc., 1955, 75, 2808-09.

SUBMITTED: March 21, 1961

Card 4/4

Kolchin, O.P.

O.P. Kolchin, I.K. Berlin. Synthesis and use of niobium carbide.

Title: Seminar on refractory metals, compounds, and alloys (Kiev, April 1963).

Source: Atomnaya energiya, v. 15, no. 3, 1963, 266-267

KOLCHIN, O.P.; BERLIN, I.K.; PRESNETSOVA, N.V.

Induction zone melting of high-melting rare metals. TSvet. met. 36 no.9:59-65 S '63. (MIRA 16:10)

ACCESSION NR: AP4042350 S/0136/64/000/007/0073/0076

AUTHOR: Kolchin, O. P.; Chuveleva, N. P.; Sumarokova, N. V.

TITLE: Using the carbothermal method to obtain niobium-base alloys by combined reduction of oxides

SOURCE: Tsvetny*ye metally*, no. 7, 1964, 73-76

TOPIC TAGS: niobium base alloy, carbothermal preparation method, niobium ternary alloy, niobium quaternary alloy, carbothermal reduction method

ABSTRACT: Two processes are described which involve the use of the carbothermal method to obtain niobium-base alloys by combined reduction of niobium and alloying elements from their oxides. In the first process, the reduction is made from a mixture of niobium pentoxide, an oxide of the alloying element, and niobium carbide; in the second it is made from a mixture of niobium pentoxide and a mixed carbide consisting of niobium carbide and alloying metal carbide, which had been mixed beforehand from niobium pentoxide, an oxide of the alloying metal, and carbon black. All mixture compacts 10 x 10 mm

Card 1/3

ACCESSION NR: AP4042350

ASSOCIATION: none

SUBMITTED: 00

SUB CODE: MM

ATD PRESS: 3069

NO REF SOV: 004

ENCL: 00

OTHER: 002

Card 3/3

L 8933-65 EWG(j)/EWT(m)/EPF(c)/EPF(n)-2/EPR/EWP(q)/EWP(b) Pr-4/Ps-4/Pu-4
ASD(f)/ASD(m)-3 JD/JG

ACCESSION NR: AP4043911 S/0136/64/000/008/0067/0071

AUTHOR: Kolchin, O. P.; Berlin, I. K. B

TITLE: Reduction of tantalum from tantalum pentoxide by the carbothermal method 27 77

SOURCE: Tsvetny*ye metally*, no. 8, 1964, 67-71

TOPIC TAGS: tantalum, tantalum pentoxide, tantalum reduction, carbothermal reduction method, optimum reduction condition

ABSTRACT: To determine optimum technology for obtaining Ta from Ta_2O_5 by reduction with carbon, the effect of various factors involved in the preparation of TaC from Ta_2O_5 and in the subsequent reduction of the Ta_2O_5–TaC mixture was investigated. The initial raw material was Ta_2O_5 powder, with a particle size of 180 , containing 0.55% TiO_2, 0.07% Fe_2O_3, and 1.34% SiO_2. TaC powder containing from 5.1 to 6.2% C total was prepared by mixing Ta_2O_5 with carbon black and heating the mixture at 1750–1800C for 1.5 hr in a current of hydrogen. A mixture of Ta_2O_5 and TaC was then compacted and reduced in a vacuum of 0.001 mm Hg by heating to 900C in 5–10 min, followed by heating to 1700C in 5 min, holding at this temperature for 2 hr, and cooling in

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L 8933-65

ACCESSION NR: AP4043911

vacuum. After reduction, the compacts were sintered at 2400C for 2 hr and then at 2700C in a vacuum of 0.005-0.0005 mm Hg. The best results were obtained with Ta_2O_5 powder with a particle size of less than 147 μ taken in an amount exceeding the stoichiometric by 2—3%, mixed for about 1 hr with TaC powder with particles ranging in size from 104 to 147 μ. The mixture was compacted in 10-mm cubes under a pressure of 1 t/cm², and the tantalum was reduced at 1700—1900C or a higher temperature in a vacuum of 0.01 mm Hg. The reduced metal was sintered in a vacuum of 0.005 mm Hg at 2400C and then at 2700—2750C with holding of [illegible] hr at each temperature. Tantalum obtained under these conditions contained a few thousandths of one percent each of C and O, 0.006 to [illegible]%, less than $(1-5)\cdot10^{-3}\%$ each of Ti, Fe, Si, Mn, S, Al, P, Cu, and As, less than $1\cdot10^{-4}\%$ each of Sn, Pb, Sb, Bi, and Cd, $\sim1\cdot10^{-4}\%$ H, and less than $3\cdot10^{-6}\%$ Zn. The yield of the sintered Ta was 95.0% of the amount contained in the Ta_2O_5. Orig. art. has: 2 tables.

ASSOCIATION: none

SUBMITTED: 00 ATD PRESS: 3109 ENCL: 00

SUB CODE: MM, IE NO REF SOV: 003 OTHER: 002

Card 2/2

EWT(m)/EPF(n)-2/EWA(d)/EWP(t)/EWP(k)/EWP(b) Pf-4/Pu-4 IJP(c)/
L 15529-65 ASD(f)-2/ASD(m)-3 JD/JG/WW S/0089/64/017/005/0400/0405
ACCESSION NR: AP4049540

AUTHOR: Kolchin, O. P.; Berlin, I. K.

TITLE: Obtaining high-purity tantalum

B

18 27

SOURCE: Atomnaya energiya, v. 17, no. 5, 1964, 400-405

TOPIC TAGS: tantalum, high purity tantalum, compacted tantalum, powder tantalum

ABSTRACT: High-purity tantalum can be obtained by the reduction of tantalum pentoxide with carbon, followed (if required) by compacting and sintering. The final operation of this process, sintering tantalum compacts in a vacuum of $5 \cdot 10^{-3}$—$5 \cdot 10^{-4}$ mm Hg at 2700—2750C, greatly reduces the content of impurities. Silicon, iron, and sulfur are eliminated after 2 hr of sintering; and titanium, after 3 hr. Carbon and oxygen make up thousandths of a percent of the final product, a quantity which does not depend on sintering time. These impurities apparently need a deeper vacuum for their elimination. The niobium content also remains unchanged. The 99.98—99.99%-pure tantalum obtained after forging with 50—60% reduction and a short annealing at 2450C was easily cold rolled into strip and foil. Orig. art. has: 4 tables.

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L 17529-65
ACCESSION NR: AP4049540

0

ASSOCIATION: none

SUBMITTED: 02Dec63 ENCL: 00 SUB CODE: MM

NO REF SOV: 004 OTHER: 001 ATD PRESS: 3152

Card 2/2

L 45759-65 EPF(c)/EPF(n)-2/EPR/EPA(s)-2/[illegible] Pc-4/Pt-4/Pr-4/Ps-4/Pt-7/Pu-4/
EWT(m)/EWP(i)/EPA(bb)-2/EWP(b)/EWP(e)/EWP(t)
Pab-10 IJP(c) RM/WH/WW/JD/JG

UR/0226/65/000/004/0025/0034

ACCESSION NR: AP5010401

72
69
B

AUTHOR: Kolchin, O. P.; Berlin, I. K.

TITLE: Production and application of niobium carbide parts

SOURCE: Poroshkovaya metallurgiya, no. 4, 1965, 25-34

TOPIC TAGS: niobium carbide, niobium carbide synthesis, niobium carbide furnace heater, heater production technology, niobium carbide heater property

[illegible] eriments have been conducted to develop the technology of making large [illegible] parts for use mostly as heaters and shields for industrial high-[illegible] induction vacuum furnaces [illegible] treatment of chemically active metals. The powdered niobium carbide used contained [illegible] 0.1—0.3% oxygen, and about 0.3% nitrogen; the particle size varied from 150 to 5 μ. Sound niobium carbide specimens with a bend strength of 278.5 Mn/m^2, a compression strength of 288.3 Mn/m^2, and a room-temperature resistivity of 0.4 x 10^{-6} ohm·m were produced by vibrational compacting of dry carbide powders with a particle size [illegible] less and subsequent sintering in a hydrogen atmosphere at 2373K. The volume shrinkage of these powders was less than 37%; the sintered parts had a porosity of less than 11% and contained almost no free carbon. The second method

Card 1/3

L 45753-65
ACCESSION NR: AP5010401

2

[illegible] was to form the parts from a mixture of niobium carbide powder and 5—10%
[illegible] aldehyde resin. At the polymerization temperature of the resin the
mixture was readily formable and sufficiently strong to be removed from the dies
[illegible] treatment. After sintering at 2373K, the parts made by this method had
[illegible] porosity of 40%. On the basis of the results obtained, two variants of the
[illegible] making niobium carbide parts were developed and used to make carbide
[illegible] for the heater and carbide liners 320
mm in diameter and 152 m[illegible] able 8 of [illegible] induction
mm [illegible] diameter and 5[illegible] mm th[illegible] from 200/180 mm rings [illegible]
[illegible] furnace assembled [illegible]
[illegible]
bium carbide heaters and other [illegible]
2773K and above in vacuum furnaces and in furnaces with an atm[illegible]
reactive with the carbide. The technology of making niobium carbide can, with some
changes be used for making parts from tantalum, zirconium, and hafnium carbides,
and also from double carbides. These carbides shield effectively active metals from
[illegible] evaporating from the graphite heaters. Carbide coating can be applied
[illegible] mens of to graphite hea[illegible] Coating graphite heaters with a lining
[illegible] pentoxide which is then [illegible] to niobium carbide increased the
maximum working temperature of [illegible] furnaces from [illegible] K. Screens

Card 2/3

L 45753-65
ACCESSION NR: AP5010401

made from niobium carbide rings 140 mm in diameter and 110 mm high increased the working temperature of graphite resistence furnaces to 2473K. Orig. art. has: 6 figures and 2 tables. [MS]

ASSOCIATION: Giredmet, Moscow

SUBMITTED: 10Dec63
ENCL: 00
SUB CODE: IE

NO REF SOV: 006
OTHER: 001
ATD PRESS: 4001

a5b

Card 3/3

L 32686-66 EWT(m)/T/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6012727 SOURCE CODE: UR/0136/66/000/004/0067/0070 48

47

AUTHOR: Kolchin, O. P.; Sumarokova, N. V.; Vol'dman, M. A.

B

ORG: none

16 27 27

TITLE: Kinetics of the combined carbothermic reduction of niobium and tungsten

SOURCE: Tsvetnyye metally, no 4, 1966, pp 67-70

TOPIC TAGS: vacuum furnace, chemical reduction, niobium, tungsten, niobium compound/ /VVPS-10A type vacuum furnace

ABSTRACT: This is a continuation of a previous investigation (O. P. Kolchin et al. Tsvetnyye metally, 1964, no 7) with the difference that it deals with a detailed investigation of the kinetics of the combined carbothermic reduction of Nb and W from the mixtures of the oxides and carbides of Nb and alloy elements at various temperatures, the degree of reduction being determined according to the change in the C content of specimens following their heating in a VVPS-10A type vacuum furnace. In the reduction products the W content was determined by the photocolorimetric thiocyanate method, correct to 3-5% (rel.); the Nb content, according to weight gain when heating the specimen in air; and the C content, by the volumetric method. It was found that in the presence of W the degree of the reduction of Nb_2O_5+5NbC at 1200 and

Card 1/2 UDC: 669.293'27.094.2

L 32686-66

ACC NR: AP6012727

1400°C is greater, particularly so when the raw charge contains 30% W in the form of an oxide rather than a carbide. X-ray structural phase analysis showed that W is the first to get reduced and subsequently, at higher temperatures, it forms an alloy with Nb, which is accompanied by the reduction of Nb. It is best to start with the temperature of 1400°C and regularly increase it until at most 1900°C. These findings confirm the earlier observation that W oxides, during the reduction virtually do not get sublimated from the burden and that even alloys with a high W content have a close-to-theoretical composition. Orig. art. has: 1 figure, 1 table.

SUB CODE: 11, 13 SUBM DATE: none/ ORIG REF: 004

Card 2/2 BLG

L 40919-66 EWP(e)/EWT(m)/EWP(t)/ETI/EWP(k) IJP(c) JD/JG

ACC NR: AP6020738 SOURCE CODE: UR/0136/66/000/006/0065/0067 67

AUTHOR: Kolchin, O. P.; Chuveleva, N. P.; Sumarokova, N. V.; Filipenko, V. V.; Men'shchikov, V. A.; Kadyshevskiy, V. S.; Belimov, N. I.; Abramovich, E. B.

ORG: none

TITLE: Manufacture of powdered niobium and its alloys by hydrogenating compacted metals and alloys

SOURCE: Tsvetnyye metally, no. 6, 1966, 65-67

TOPIC TAGS: metal powder, powder metal production, niobium, powder metallurgy, hydrogenation, niobium alloy

ABSTRACT: The report presents a method for manufacturing high purity powders by hydrogenating niobium or its alloys at lower temperatures (360 to 400C) and lesser excess hydrogen pressures (up to 0.7 atm) than those commonly required. The process is even faster at the reduced temperature levels. Hydrogenation and milling techniques are given in detail for source materials derived by electron beam smelting or carbide heating processes. For the latter, direct yield of dehydrogenated powder was 91.4%, total yield 98.3%, unaccountable losses 1.1%. The impurity content in niobium powders obtained from different compacted metals is

UDC: 669.293-492.2

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L 40919-66

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ACC NR: AP6020738

given in Table 1.

Table 1. Impurity content (% by man) in niobium powders obtained from different compacted metals.

Initial material			Powder (—0.147 mm)		
N	O	C	N	O	C
Reduced Metal					
0.04	0.27	0.15	0.04	0.24	—
0.05	0.27	0.08	0.05	—	0.11
0.05	0.20	0.09	0.05	—	—
0.05	0.20	0.10	0.03	—	—
0.04	0.28	0.07	0.06	—	—
0.04	0.13	0.06	0.09	—	—
0.07	0.24	0.05	0.05	0.32	—
0.05	0.20	0.07	0.04	0.30	—
0.05	0.15	0.06	0.05	—	—
Ends of rods of a sintered Metal*					
0.05	—	0.12	0.08	0.16	0.15
0.04	0.45	0.20	0.02	0.46	0.26
0.05	0.25	0.12	0.05	—	0.11
0.04	0.27	0.08	0.05	0.30	0.11
—	—	—	0.05	0.35	0.06
0.05	—	—	0.06	0.40	0.20

*The sintered rods contain 0,01—0,03% C; 0,02% N; 0,02% O; <0,01% Ti и Si; 0,01—0,03% Fe; 0,15—0,25% Ta; ~ 99,9% Nb (+Ta).

Card 2/3

L 40919-66

ACC NR: AP6020738

Orig. art. has: 2 figures and 1 table.

SUB CODE: 11,13/ SUBM DATE: 00/ ORIG REF: 001/ OTH REF: 002

Card 3/3 llb

L 02427-67 EWT(m)/T/EWP(t)/ETI IJP(c) JD/JG

ACC NR: AP6031728 SOURCE CODE: UR/0136/66/000/009/0072/0074

AUTHOR: Kolchin, O. P.; Filipenko, V. V.; Nizharadze, K. S.; Abramovich, E. B.; Sumarokova, N. V.; Men'shchikov, V. A.

36
35
B

ORG: none

TITLE: Synthesis of niobium carbide with a low nitrogen content

27 21

SOURCE: Tsvetnyye metally, no. 9, 1966, 72-74

TOPIC TAGS: niobium carbide, high purity carbide, ~~low nitrogen niobium carbide,~~ niobium carbide synthesis, NIOBIUM COMPOUND, CARBIDE, NITROGEN, OXYGEN, CHEMICAL SYNTHESIS

ABSTRACT: An investigation has been made of the various factors which contribute to the contamination with nitrogen and oxygen of niobium carbide produced by a continuous process in the Tamman furnace. The investigation results showed that the only significant source of contamination was the inflow of air into the reaction chamber when the furnace was opened every 30 min for charging and removing the final product. Modification of the charge chamber decreased the cross section of the charging shute from 1000 to 160 cm^2, cut in three the number of openings required to charge the chamber, and sharply reduced the amount of the air flowing in through a narrowed charge shute. A hydraulic lock was also installed for combustion gases, which made it possible to increase the pressure of gases in the furnace to 100—200 mm Hg and thus practically eliminate the inflow of air into the furnace.

Card 1/2 UDC: 669.293

IVANOVSKIY, V.G.; KOLCHIN, P.A.

New mine hoisting machinery. Ugol' Ukr. 3 no.10:31-32
O '59. (MIRA 13:2)
(Hoisting machinery) (Mining engineering)

ACCESSION NR: AT4037702 S/2865/64/003/000/0318/0323

AUTHOR: Belay, V. Ye.; Vasil'yev, P. V.; Kolchin, S. P.

TITLE: Effect of prolonged transverse acceleration on the functional state of the central nervous system in animals

SOURCE: AN SSSR. Otdeleniye biologicheskikh nauk. Problemy* kosmicheskoy biologii, v. 3, 1964, 318-323

TOPIC TAGS: acceleration, centrifuge, mouse, rat, central nervous system, chloral hydrate, narcosis, sodium pentothal, conditioned reflex

ABSTRACT: The functional state of excitation-inhibition processes in the cerebral cortex and subcortical structures under the effect of transverse accelerations of various magnitudes and durations was studied in 467 mice and 80 rats. The functional state was estimated on the basis of response to two narcotics, the first (chloral hydrate) acting primarily on the cortex and the second (sodium pentothal) on the subcortical structures. Acceleration was generated on a centrifuge with a radius of 3.7 m. The usual direction of acceleration was back-to-chest. The general condition and behavior of the animals depended on the magnitude and dura-

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ACCESSION NR: AT4037702

tion of loading. Acceleration of 13 g for 9 min produced depression, quiescence, and tremor, while the same acceleration for 3 min produced general excitation expressed in increased motor activity and aggressiveness. Reaction to the drugs also varied with the magnitude and duration of acceleration. The duration of chloral hydrate narcosis in mice subjected to 13 g for 3 min was half that observed in the controls; the same acceleration for 9 min caused narcosis to last more than twice as long as it did in the controls. Analogous results were obtained with rats, though the differences between centrifuged animals and controls were less pronounced. Tests with sodium pentothal produced exactly opposite results. Acceleration of 13 g for 3 min increased the duration of sodium pentothal narcosis, while 9 min of the same acceleration decreased it. Tests conducted to determine the time required after centrifugation for excitation-inhibition processes to return to normal showed that chloral hydrate narcosis of close to normal duration can be obtained only when the drug is administered at least 2 hr after centrifugation. This may be compared with a normalization time of 10 to 15 min for conditioned reflexes. It is concluded that longer (9 min) accelerations result in inhibition of the cortex and excitation of subcortical structures, while the briefer

ACCESSION NR: AT4037702

(3 min) accelerations excite the cortex and inhibit the subcortical structures.

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: PH, LS

NO REF SOV: 008

OTHER: 003

Card 3/3

BELAY, V.Ye.; VASIL'YEV, P.V.; KOLCHIN, S.P.; MASLYANENKO, S.V. (Moskva)

Effect of strychnine on the resistance of animals to acceleration. Pat. fiziol. i eksp. terap. 8 no.5:15-20 S-0 '64. (MIRA 18:12)

1. Submitted May 28, 1963.

BELAY, V.Ye.; VASIL'YEV, P.V.; KOLCHIN, S.P. (Moskva)

Reactivity of the animal body to narcotics following a prolonged effect of lateral acceleration. Farm. i toks. 26 no.5: 559-563 S-O '63. (MIRA 17:8)

POLEZHAYEV, L.V.; KOLCHIN, S.P.; SOLNTSEVA, G.N.

Stimulation of regeneration of the heart muscle in diphtherial myocarditis. Dokl. AN SSSR 164 no.4:949-952 O '65. (MIRA 18:10)

1. Institut morfologii zhivotnykh im. A.N.Severtsova AN SSSR. Submitted April 27, 1965.

KOLCHIN, V., starshiy inzh. podrazdeleniya aviatsii spetsial'nogo primeneniya

Formerly 164 hectares, now 105,000. Grazhd. av. no.3:26 Mr '61. (MIRA 14:3)

(Kirov Province—Aeronautics in agriculture)

KOLCHIN, V., inzh.-vzryvnik; KLOPOV, G. (Sverdlovsk); GULIN, G., rabochiy korrespondent (Sverdlovskaya obl.)

Editor's mail. Okhr. truda i sots. strakh. 5 no.5:30 My '62. (MIRA 15:5)

1. Trest "Intaugol'", g. Inta, Komi ASSR.

(INTA—MEDICINE, INDUSTRIAL)

SERKOV, A.T.; KOTOMINA, I.N.; KOLCHIN, V.A.

Zinc sulfate regeneration in the production of extrastrong viscose cord. Khim.volok. no.5:30-32 '62. (MIRA 15:11)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut iskusstvennogo volokna.

(Viscose)
(Zinc sulfate)

BALAKISHIYEV, G.A.; KOLCHIN, V.A.

Theory of ultrasonic flowmeters. Za tekh. prog. 3 no.7:8-9,19 Jl '63. (MIRA 16:12)

1. Nauchno-issledovatel'skiy i proyektnyy institut "Neftekhimavtomat."

VUL'FSON, N.S.; KOLCHIN, V. Ye.

Derivatives of acylacetic esters of the heterocyclic series. Part 5: Synthesis of isonicotinoyl ester, arylides, and azomethine dyes produced from them. Zhur. ob. khim. 34 no.7: 2387-2390 Jl '64 (MIRA 17:8)

1. Institut khimii prirodnykh soyedineniy AN SSSR i Nauchno-issledovatel'skiy institut organicheskikh poluproduktov i krasiteley.

KOLCHIN, V.E.

Transactions of the Sixth Conference (Cont.) SOV/6371

58. Belyayev, Yu. K. "Ruled" Markov Processes and Their Application to Problems in the Theory of Reliability 309

59. Bobrov, A. A., and D. Z. Arov. Flows of Random Events Without Aftereffect 325

60. Bondareva, O. N. Existence of a Solution Coinciding With the Kernel in a Game of n Persons 337

61. Girsanov, I. V. Minimax Problems in the Theory of Diffusion Processes 339

62. Gnedenko, B. V., Yu. K. Belyayev, and I. N. Kovalenko. Basic Trends of Investigations in the Theory of Queues 341

63. Kovalenko, I. N. On a Method in the Theory of Queues 357

64. Kolchin, V. F. Some Problems in the Theory of Dynamic Games 359

Transactions of the 6th Conf. on Probability Theory and Mathematical Statistics and of the Symposium on Distributions in Infinite-Dimensional Spaces held in Vil'nyus, 5-10 Sep '60. Vil'nyus Gospolitizdat Lit SSR, 1962. 493 p. 2500 copies printed

L 45440-66 EWT(d)/T IJP(c)

ACC NR: AP6021856 SOURCE CODE: UR/0052/66/011/001/0144/0156

22
21
B

AUTHOR: Kolchin, V. F. (Moscow)

ORG: none

TITLE: Speed of convergence to limiting distributions in a classical problem with balls

SOURCE: Teoriya veroyatnostey i yeye primeneniya, v. 11, no. 1, 1966, 144-156

TOPIC TAGS: probability, normal distribution, classical approximation

ABSTRACT: The article deals with the speed of convergence of distributions of μ_r to limiting distributions with $n, N \to \infty$. Each of n balls is deposited in a cell selected at random out of N given cells. The successive selections are mutually independent, and the probability of any fixed cell being selected is equal to 1/N. Let μ_r be the number of cells that contain exactly r balls, $r = 0, \ldots, n$. The variational distance between the distributions of μ_r and the limiting distributions are calculated. When the order of the value of $\alpha = n/N$ is known, the nearest

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ACC NR: AP6021956

distribution to μ_r is found for this distance, and its exact upper limit is calculated for $a, 0 < a < \infty$. As a result, the speed of convergence of the distributions of μ_r can be compared with the classical case of approximation of the binomial distribution that has been investigated by Yu. V. Prokhorov (Yu. V. Prokhorov, Asimptoticheskoye povedeniye binomial'nogo raspredeleniya, Uspekhi matem. nauk, VIII, 3(1953), 135—142). The exact upper limit of the distance to the nearest limiting distribution for the binomial distribution with parameters n and $p, 0 < p < 1$, is $cn^{-1/2}(1 + O(n^{-1/2}))$, and for the distributions of μ_r, it is equal to $cn^{-1/2}(\log n + (2r + 1)\log\log n)^{1/2}(1 + O(\log^{-1} n))$, where c is a known constant. The author thanks B. A. Sevast'yanov for his constant attention to this study. Orig. art. has: 5 formulas and 1 table. [Based on author's abstract] [NT]

SUB CODE: 12/ SUBM DATE: 20Aug65/ ORIG REF: 002/

LS

Card 2/2

KOLCHIN, Viktor Pavlovich; FEDOROV, B.D., dots., retsenzent; SEREBRYANYY, A.G., inzh., otvetstvennyy red.; LOMILINA, L.N., tekhn. red.

[Collection of problems and exercises in surveying] Sbornik zadach i uprazhnenii po geodezii. [Moskva] Ugletekhizdat, 1958. 214 p. (MIRA 11:9)
(Surveying)

VOROB'YEV, A.S.; KOLCHIN, V.V.

Effect of small additions on the temperature dependence of the initial magnetic susceptibility of magnesium zinc ferrites. Izv. vys. ucheb. zav.; fiz. no.4:180-183 '64
(MIRA 17:8)

1. Moskovskiy energeticheskiy institut.

L 6777-65 EWT(1)/EED-2 ASD(a)-5/ESD(t)/RAEM(t)

ACCESSION NR: AP4043880 S/0139/64/000/004/0180/0183

47
46

AUTHORS: Vorob'yev, A. S.; Kolchin, V. V.

TITLE: Effect of small additions on the temperature dependence of the initial magnetic permeability of manganese-zinc ferrites

SOURCE: IVUZ. Fizika, no. 4, 1964, 180-183

TOPIC TAGS: ferrite crystallization, manganese ferrite, magnetic permeability, temperature dependence, Curie temperature

ABSTRACT: To reduce the temperature dependence of the initial magnetic permeability of manganese-zinc ferrites, small amounts of the oxides Cr_2O_3, Al_2O_3, and NiO were added to the ferrites. To prevent uneven distribution of the additives, which is shown to cause large variations in the measured parameters of different samples of a single batch of the synthesized material, particularly the initial permeability, the oxides were added in the form of aqueous solutions

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ACCESSION NR: AP4043880

0

of salts. The Al_2O_3 and NiO were introduced in the Mn-Zn ferrite (composition 0.52 Fe_2O_3·0.27 MnO·0.21 ZnO, and the Cr_2O_3 was added in a ferrite with composition 0.525 Fe_2O_3·0.211 ZnO·0.264 MnO. The Cr_2O_3 and NiO were introduced in the charge in the form of water-soluble salts $(NH_4)_2Cr_2O_7$ and $NiSO_4$, while the Al_2O_3 was added in the form of alumina. The procedure for preparing the charge, mixing the initial materials, and measuring the initial magnetic permeability are described. The resultant materials exhibited a small change in the temperature interval from -90 to +150 [illegible], with a temperature coefficient ranging from 0.280 x 10^{-3} to 1.2[illegible] x 10^{-3} per degree. It is suggested that if the ions of the additive are not uniformly distributed in the material, solid solutions having different Curie temperatures are produced, so that the Curie point of the final material broadens into a Curie region. It is pointed out that uneven

Card 2/3